Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (canceled)

2. (previously presented) A network relay apparatus for connecting networks to each other, which are logically constructed, comprising:

a reception port;

a transmission port; and

relay means for relaying a multicast packet between logically constructed networks based upon reception information containing reception port information related to a reception port which receives the multicast packet, and reception source network information related to a first network functioning as a reception source of said multicast packet; and also transmission information provided in correspondence with said reception information and containing transmission port information related to a port through which said multicast packet is transmitted, and transmission source network information related to a second network functioning as a transmission destination of said multicast packet,

wherein said reception information contains life information of a received multicast packet; and one of first life information and second information is registered

into said life information, as a result of a comparison made between said first life information which has already been registered in said life information and said second life information owned by a newly received multicast packet.

3. (original) A network relay apparatus as claimed in claim 2 wherein:

in a case that said life information is said second life information, said reception port information and said reception source network information are updated/registered into reception port information and reception source network information of a multicast packet containing said second life information, respectively.

4. (previously presented) A network apparatus as claimed in claim 3 wherein:

said reception information includes:

valid/invalid registering information which is registered as valid information after said updating/registering operation has been carried out and thereafter a predetermined time duration has passed.

5. (original) A network relay apparatus as claimed in claim 3 wherein:

said reception information includes:

valid/invalid registering information which becomes valid after a predetermined time duration has passed since a multicast packet has been first received.

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6. (currently amended) A network relay apparatus as claimed in ~~claim 1~~claim 2 further comprising a registering means that additionally registers information related to a multicast packet into said transmission information when the multicast packet is received.

7. (canceled)

8. (previously presented) A network relay apparatus for connecting networks to each other, which are logically constructed, comprising:

a reception port;

a transmission port; and

relay means for relaying a multicast packet between logically constructed networks based upon reception information containing reception port information related to a reception port which receives the multicast packet, and reception source network information related to a first network functioning as a reception source of said multicast packet; and also transmission information provided in correspondence with said reception information and containing transmission port information related to a port through which said multicast packet is transmitted, and transmission source network information related to a second network functioning as a transmission destination of said multicast packet, said transmission information including rewrite

information which is provided with a multicast packet and is rewritten when the multicast packet is relayed, and

said rewrite information including comparison information acquired by comparing life information obtained after rewriting operation with life information obtained before rewriting operation while said multicast packet is relayed and a second layer address which is applied to a second layer of an OSI (Open systems Interconnection) reference model obtained after rewriting operation while said multicast packet is relayed.

9. (currently amended) A network relay apparatus as claimed in ~~claim 1~~claim 2 wherein:

said network relay apparatus is further comprised of:

a learning process unit for forming both said reception information and said transmission information while the multicast packet is relayed.

10. (currently amended) A network relay apparatus as claimed in ~~claim 1~~claim 2 wherein:

said reception information includes:

a destination address and a transmission source address, which are related to such a multicast packet which has been registered as said reception information; and

packet discrimination information capable of discriminating as to whether or not said multicast packet registered as said reception information has already been registered into said reception information.

11. (original) A network relay apparatus as claimed in claim 10 wherein:

said packet discrimination information includes:

reception source network information related to a network of a reception source concerning the multicast packet which is registered into said reception information; and

reception port information related to a multicast packet received port.

12. (currently amended) A ~~information relay apparatus for relaying a multicast packet among a plurality of logical networks of information, comprising:~~<u>network relay apparatus as claimed in claim 2, wherein said relay means comprises:</u>

a reception processing unit for performing a multicast packet allocating operation in response to a sort of a multicast packet;

a relay processing unit for performing a relay processing operation capable of transmitting the multicast packet allocated by said reception processing unit to transmission destinations including logically different networks of information; and

a learning process unit for registering, into a predetermined table, <u>said reception information and said transmission</u> information related to said multicast

packet to be transmitted, when said relay processing unit carries out said relay processing operation.

13. (currently amended) A <u>network relay apparatus as claimed in claim 2,</u> <u>said</u> relay apparatus constituting VLAN (Virtual Area Local Network),~~comprising~~:

<u>wherein said relay means includes</u> a VLAN table including:

a discrimination number for a VLAN to which another relay apparatus connected to said relay apparatus belongs;

port information related to a port connected to said another relay apparatus, which is provided in correspondence with said discrimination number; and

valid port information provided in correspondence with said port information, capable of discriminating as to whether or not said another relay apparatus owns a learning function by which information related to a multicast packet is registered into a predetermined table similar to said relay apparatus; and in which when said another relay apparatus owns said learning function, said port is regarded as a valid port and is registered.

14. (original) A relay apparatus as claimed in claim 13 wherein:

said valid port information is registered as a valid port, since the own relay apparatus transmits/receives a signal to/from said another relay apparatus.

15. (original) A relay apparatus as claimed in claim 14 wherein:

said signal corresponds to such a packet exclusively used in said relay apparatus.

16. (original) A relay apparatus as claimed in claim 15 wherein:

said signal corresponds to such a signal produced by adding specific information to a header of a packet.

17. (currently amended) An information relay apparatus for relaying information in a plurality of logical information networks, comprising:

a multicast relay destination registering table into which a relay destination in a predetermined multicast relay process operation is registered; and

multicast relay means operated in such a manner that when data is relayed from networks which are physically identical to each other, but are logically different from each other to a same destination with reference to said multicast relay destination registering table, such data having a same content are relayed only one time to said same destination with respect to a relay ~~destination.~~destination, wherein:

said relay means includes a multicast learning table as said multicast relay destination registering table,

during a learning period for a predetermined time after receiving a first multicast packet from said information network, said relay means registers, if not registered, reception information and transmission information related to said multicast packet received into said learning table and executes relay processing, but

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if said reception information and said transmission information have already been registered, said relay means does not execute relay processing, and

after said learning period, said relay means executes relay processing of said received multicast packet according to said learning table.

18. (currently amended) An information relay apparatus for relaying information in a plurality of logical information networks, comprising:

a reception port;

a transmission port; and

multicast as claimed in claim 17, wherein said relay means for receiving receives only one time, one of multicast packets having a same content and directed to a same destination from information networks which are physically identical to each other, but are logically different from each other after a first multicast packet has been received from said information networks, and thereafter, a preselected time duration has passed.

19. (currently amended) An information relay apparatus for relaying information in a plurality of logical information networks, comprising:

a reception port;

a transmission port; and

multicast as claimed in claim 17, said relay means for transmitting transmits one time, one of multicast packets having a same content to relay a destination

which constitutes such networks physically identical to each other, but logically different from each other in a case that multicast packets having the same content and directed to the same destination are transmitted after a first multicast packet has been received from said information networks, and thereafter, a preselected time duration has passed.

20. (currently amended) An information relay apparatus as claimed in ~~claim 17~~ claim 23 wherein:

said networks which are physically identical to each other, but are logically different from each other include:

a logical network which is exclusively provided in order to execute a multicast relay process operation.

21. (currently amended) An information relay apparatus as claimed in ~~claim 17~~ claim 23 wherein:

in such a case that a multicast packet is received from more than one network which are physically identical to each other, but are logically different from each other, one network selected from more than one network which are physically identical to each other, but are logically different from each other is registered as a representative network in said multicast relay destination registering table.

22. (original) An information relay apparatus as claimed in claim 21 wherein:

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when said multicast relay means receives a multicast packet from said network registered as the representative network, said multicast relay means relays said received multicast packet with respect to transmission destinations which are registered in said multicast relay destination registering table.

23. (previously presented) An information relay apparatus for relaying information in a plurality of logical information networks, comprising:

a multicast relay destination registering table into which a relay destination in a predetermined multicast relay process operation is registered; and

multicast relay means operated in such a manner that when data is relayed from networks which are physically identical to each other, but are logically different from each other to a same destination with reference to said multicast relay destination registering table, such data having a same content are relayed only one time to said same destination with respect to a relay destination,

wherein in such a case that a multicast packet is received from more than one network which are physically identical to each other, but are logically different from each other, one network selected from more than one network which are physically identical to each other, but are logically different from each other is registered as a representative network in said multicast relay destination registering table, and

wherein a difference between life information about a multicast packet when being received from said network registered as representative network, and life information about said multicast packet when the multicast packet received by the

multicast relay process operation is transmitted is registered as rewrite information in said multicast relay destination registering table.

24. (original) An information relay apparatus as claimed in claim 23 wherein: among said more than one network which are physically identical to each other, but are logically different from each other, and also which receive the same, or duplicated multicast packets, such a reception network which has received the multicast packet whose life information value is large is registered as a representative network in said multicast relay destination registering table.

25. (original) An information relay apparatus as claimed in claim 23 wherein: said multicast relay means rewrites a multicast packet received from said network registered as the representative network based upon said rewrite information, and thereafter relays the rewritten multicast packet.

26. (original) An information relay apparatus as claimed in claim 25 wherein: with respect to the relay process operation of an IPv4 (Internet Protocol version 4) multicast, said life information corresponds to a TTL value of an IPv4 header of a multicast packet.

27. (original) An information relay apparatus as claimed in claim 25 wherein:

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with respect to the relay process operation of an IPv6 (Internet Protocol version 6) multicast, said life information corresponds to a Hop Limit value of an IPv6 header of a multicast packet.

28. (currently amended) ~~An information~~ A network relay apparatus as claimed in claim 2,~~for constituting a logical network and for relaying a multicast packet received from a first logical network to a second logical network, comprising:~~

wherein said relay means includes a multicast relay destination registering table into which when a multicast packet is received from more than one network which are physically identical to each other, but are logically different from each other, one network among said networks physically identical to each other, but logically different from each other is registered as a representative network.

29. (currently amended) ~~An information~~ A network relay apparatus ~~for constituting logical networks and for relaying~~ as claimed in claim 2, wherein said relay apparatus relays a multicast packet received from a first logical network to a second logical network, ~~comprising:~~

~~a reception port;~~

~~a transmission port;~~ and

said relay means receives ~~operated in such a manner that~~ said multicast packet transmitted from said first logical network ~~is received~~ via one port from another information relay apparatus which similarly constitutes logical networks, and

transmits said multicast packet is transmitted via the other port to another logical network containing either said first logical network or said second logical network.

30. (currently amended) An information A network relay apparatus for relaying a multicast packet among logically formed networks, as claimed in claim 2, wherein:

in such a case that similar to the information relay apparatus, another information relay apparatus connected to the information relay apparatus owns a learning function related to a relay process operation of a multicast packet,

both said information relay apparatus and said another information relay apparatus constitute a logical network which is exclusively employed so as to perform the multicast relay process operation.

31. (currently amended) An information relay apparatus for relaying as claimed in claim 17, wherein said relay apparatus relays a multicast packet received from a first logical network to a second logical network, comprising:and

said relay means for relaying relays said multicast packet received from said first logical network only one time after a first multicast packet has been received from said second logical network, and thereafter, a predetermined time duration has passed, whereby said multicast packet is relayed to information relay apparatuses which constitute said second logical network.

32. (currently amended) An information relay apparatus <u>as claimed in claim</u> <u>17,</u>~~comprising:~~

~~a reception port;~~

~~a transmission port; and~~

<u>wherein said relay means includes</u> transmission means ~~operated in such a~~ ~~manner~~ that <u>transmits,</u> after a multicast packet has been received from a network which is connected to an own information relay apparatus and is logically constituted, and thereafter, a predetermined time duration has passed, a multicast packet received from said network ~~is transmitted~~ only one time to another network which is logically constituted.

33. (original) An information relay apparatus as claimed in claim 32 wherein:

said multicast packet which is transmitted by said transmission means only one time owns a same destination as that of a multicast packet which is received from said network within said predetermined time duration, and owns a same transmission source so that of said second-mentioned multicast packet, and further, is received from a same port for said second-mentioned multicast packet.

34. (currently amended) A <u>network</u> relay apparatus ~~for connecting networks~~ ~~to each other, which are logically constructed, comprising:~~<u>as claimed in claim 2,</u> <u>wherein said relay means includes:</u>

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a learning table into which transmission destination information of transmission destinations are registered, while a multicast packet is relayed, the relay apparatus being required to transmit the multicast packet to said transmission destinations; and

a learning process unit for relaying said multicast packet to the transmission destinations registered in said learning table by comparing both a destination address and a transmission source address of a multicast packet received from one network among said networks with said learned transmission destination information which is registered in said learning table.

35. (currently amended) A network relay apparatus ~~for connecting networks to each other, which are logically constructed, comprising:~~as claimed in claim 2, wherein said relay means includes:

a learning table into which information used to relay a multicast packet is registered; and

a learning process unit for relaying said multicast packet to ports contained in the learned information registered in said learning table by comparing both a destination address and a transmission source address of a multicast packet received from one network among said networks with said learned information which is registered in said learning table.

36. (currently amended) ~~An~~ A network relay apparatus as claimed in claim

2, ~~comprising:~~

~~a port; and~~

wherein said relay means includes a multicast information table including:

a reception information area into which both destination information and

transmission source information contained in a multicast packet received from a first

logically-constituted network are registered in correspondence with network

information related to said first network; and

a transmission information area into which a logically-constituted network is

registered in correspondence with a port connected to said second network, a

multicast packet being transmitted to said logically-constituted second network.

37. – 43. (canceled)

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